

ABSTRACT

A valve body having one or more integral seal retention grooves and one or more interior hollows which may be manufactured using frictional or other types of welding to join two previously formed portions through at least one cylindrical web. Forging or casting valve body portions to near-net-shape prior to joining minimizes machining necessary to achieve a final desired shape. Finish machining of certain valve body surfaces prior to joining is optional. One or more interior hollows and an integral seal retention groove are formed in the welded valve body from features present on the portions joined by welding to form the body. Such valve bodies have relatively high stiffness for their weight and require only limited machining to achieve a final shape. Increased valve durability and reduced metal wear arise from the reduced valve body weight and correspondingly reduced impact loading as the valve body moves to seal against a valve seat. An elastomeric seal may be cast and cured in place in a seal retention groove, coupled thereto through welding flash protruding into the groove and/or through at least one serration in the groove.